

Integrating Water Management in California

Water Plan Update 2009 & 2013

WQCC Meeting
November 1, 2012

California **Water Plan** Highlights

INTEGRATED WATER MANAGEMENT



Update 2009 • Department of Water Resources

Update 2009 – State's Blueprint Integrated Water Management & Sustainability



VISION

- Public Health, Safety, Quality of Life
- Vitality, Productivity, Economic Growth
- Healthy Ecosystem, Cultural Heritage

Foundational Actions for **SUSTAINABLE WATER USES**

- Use Water Efficiently
- Protect Water Quality
- Expand Environmental Stewardship

Initiatives for **RELIABLE WATER SUPPLIES**

- Expand Integrated Regional Water Management
- Improve Statewide Water and Flood Management Systems

3 I's - Invest in Innovation & Infrastructure

California State Government in partnership with others should invest in water innovation & infrastructure to support integrated water management and sustainable outcomes

➤ Innovation actions

- Governance improvements
- Planning & public process improvements
- Information technology (data & tools)
- Water technology / R&D

➤ Infrastructure improvements (natural & human)

- Regional projects
- Inter-regional projects
- Statewide systems

➤ State Investments - Finance Plan

- Stable funding for innovation actions & statewide systems
- Seed money to incentivize regional infrastructure improvements



Integrated Regional Water Management

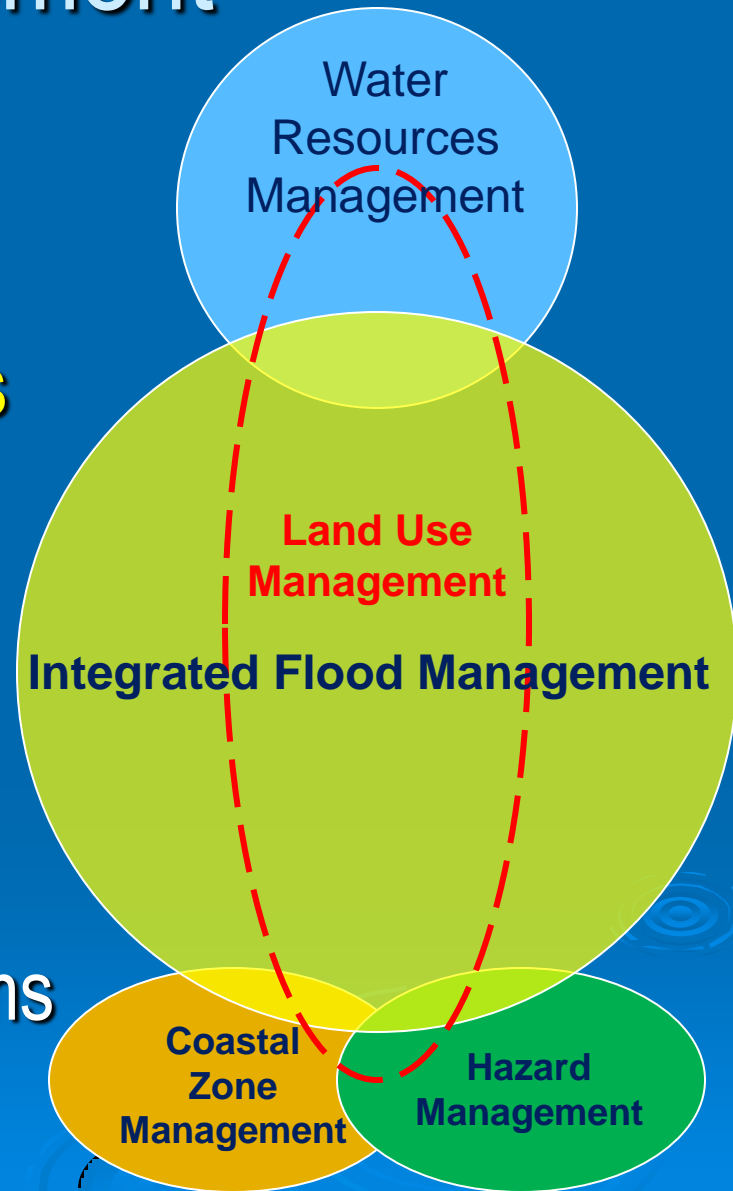
48 Regional Water Mgmt Groups



- Foster partnerships & promote regional solutions
- Diversify water portfolios & integrate supplies
- Leverage economies of scale to reduce costs
- Integrate data, tools & resources
- Invest in multi-benefit projects with sustainable outcomes
- Increase regional self-sufficiency

Integrated Flood Management

- Comprehensive approach to flood management
- Considers land & water resources at watershed scale
- Minimizes loss of life and property damage from flooding
- Maximizes benefits of floodplains
- Recognizes benefits to ecosystems from periodic floods



Improving Coordination Land Use Planning & Water Management



- Land use planning controlled locally
- Water management decentralized -- over 2,300 counties, cities, public agencies, and private water companies
- IRWM coordinates land use planning with water supply, quality, flood management, and climate adaptation
- State Government provides technical assistance and financial incentives
- More coordination among State agencies & with IRWM Partnerships

27+ 3 New Resource Management Strategies

A Range of Choices

Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers

- Conveyance – Delta
- Conveyance – Regional / Local
- System Reoperation
- Water Transfers

Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination –Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage – Regional / Local

Improve Flood Management

- Flood Risk Management

Improve Water Quality

- Drinking Water Treatment & Distribution
- Groundwater / Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Salt & Salinity Management
- Urban Runoff Management

Practice Resource Stewardship

- Agricultural Lands Stewardship
- Economic Incentives
(Loans, Grants & Water Pricing)
- Ecosystem Restoration
- Forest Management
- Land Use Planning & Management
- Recharge Areas Protection
- Water-Dependent Recreation
- Watershed Management

New – Education & Outreach
Sediment Management
Water & Culture

Potential Strategy Benefits										
Provide Water Supply Benefit MAF/year - Applied Water	Improve Drought Preparedness	Improve Water Quality	Operational Flex & Efficient	Reduce Flood Impacts	Environmental Benefits	Energy Benefits	Recreational Opportunities	Reduce GW Overdraft	Accumulated Cost by 2030 (\$ Billions)	

Reduce Water Demand

Water conservation has become a viable long-term supply option because it saves considerable capital and operating costs for utilities and consumers, avoids environmental degradation, and creates multiple benefits.

Strategy	MAF/year ¹	Potential Strategy Benefits								Accumulated Cost by 2030 \$ Billions ¹
Agricultural Water Use Efficiency	0.1 - 0.6 ²									0.3 - 4.0
Urban Water Use Efficiency	1.2 - 3.1									2.5 - 6.0

Improve Operational Efficiency & Transfers

California's water system responds to our need to move water from where it occurs to where it will be used.

Strategy	MAF/year ¹	Potential Strategy Benefits								Accumulated Cost by 2030 \$ Billions ¹
Conveyance—Delta	0.1 - 0.6									1.2 - 17.2
Conveyance—Regional/Local										
System Reoperation										
Water Transfers										

Increase Water Supply

California's communities are finding innovative ways to generate new supplies.

Strategy	MAF/year ¹	Potential Strategy Benefits								Accumulated Cost by 2030 \$ Billions ¹
Conjunctive Management & Groundwater Storage	0.5 - 2.0									
Desalination – Brackish & Seawater	0.3 - 0.4									0.9 - 2.9
Precipitation Enhancement	0.3 - 0.6									0.2
Recycled Municipal Water	0.9 - 1.4									6.0 - 9.0
Surface Storage—CALFED ³	0.1 - 1.0									0.7 - 9.2
Surface Storage—Regional/Local (under development)										

1. Additional information is found in Volume 2.
2. Value is Net Water to account for water reuse among agricultural water users.
3. Reflects cost allocation of annual water benefit which is not the total cost of the project.

RMS Tables

Reduce Demand

Improve Op Efficiency & Transfers

Increase Supply

3 Future Scenarios: Key Factors of Uncertainty

2050
Planning
Horizon

Factors of Uncertainty

Population

Land Use

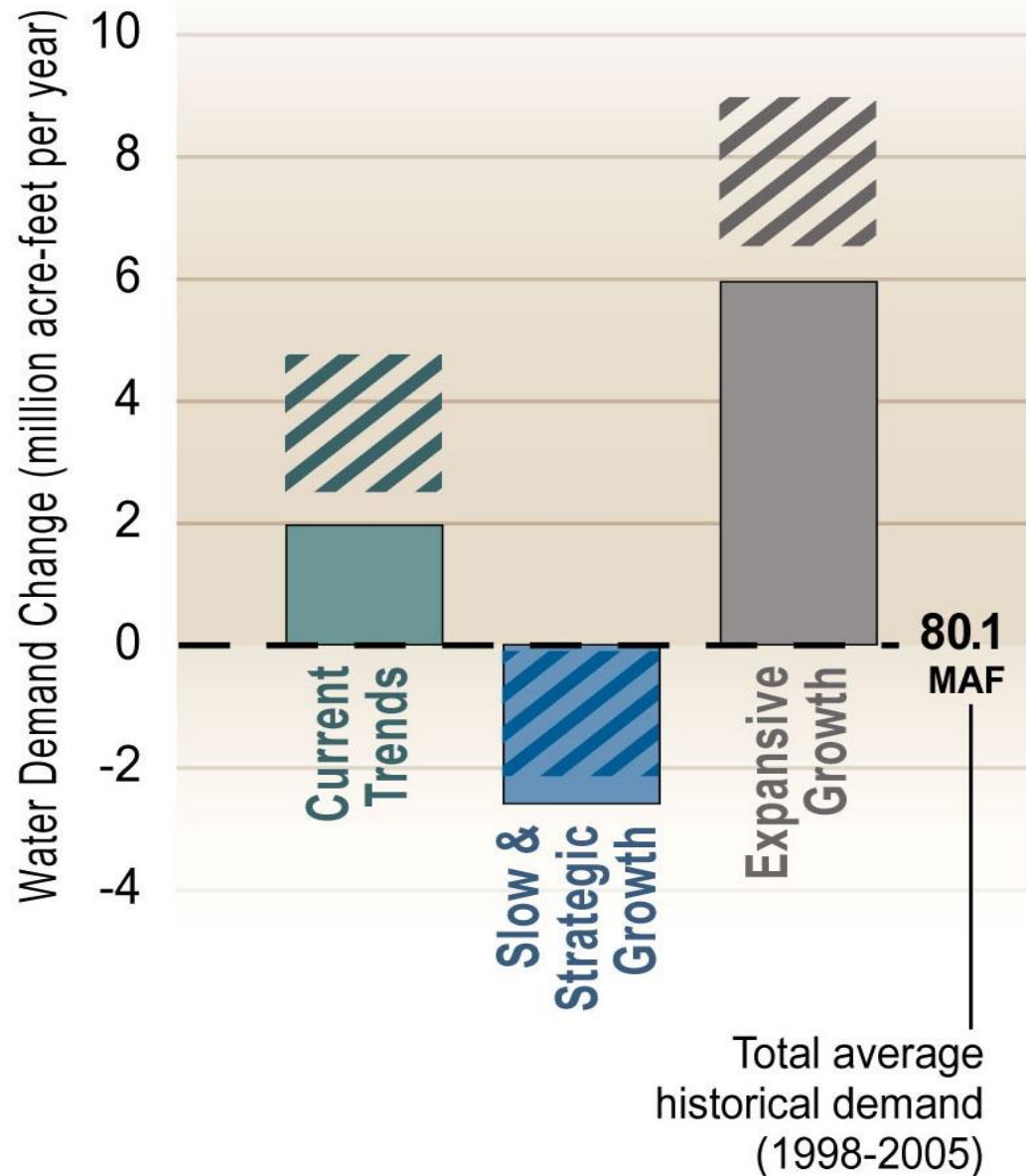
Irrigated Crop Area

Environmental Water

Background Water
Conservation

Statewide Water Demand Change for 2050 Scenarios

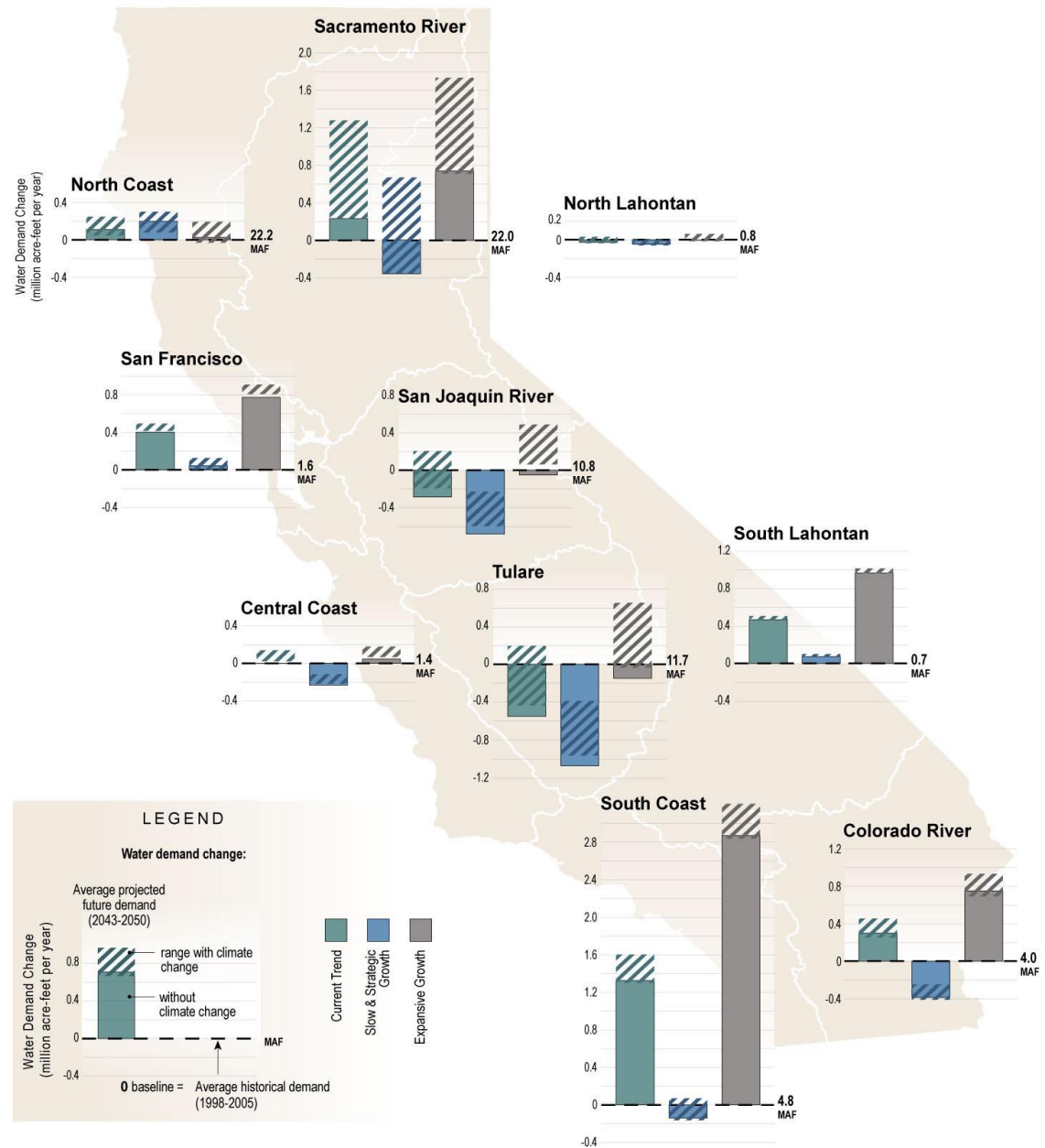
Without & With
Climate Change



Water Demand Change for 2050 Scenarios

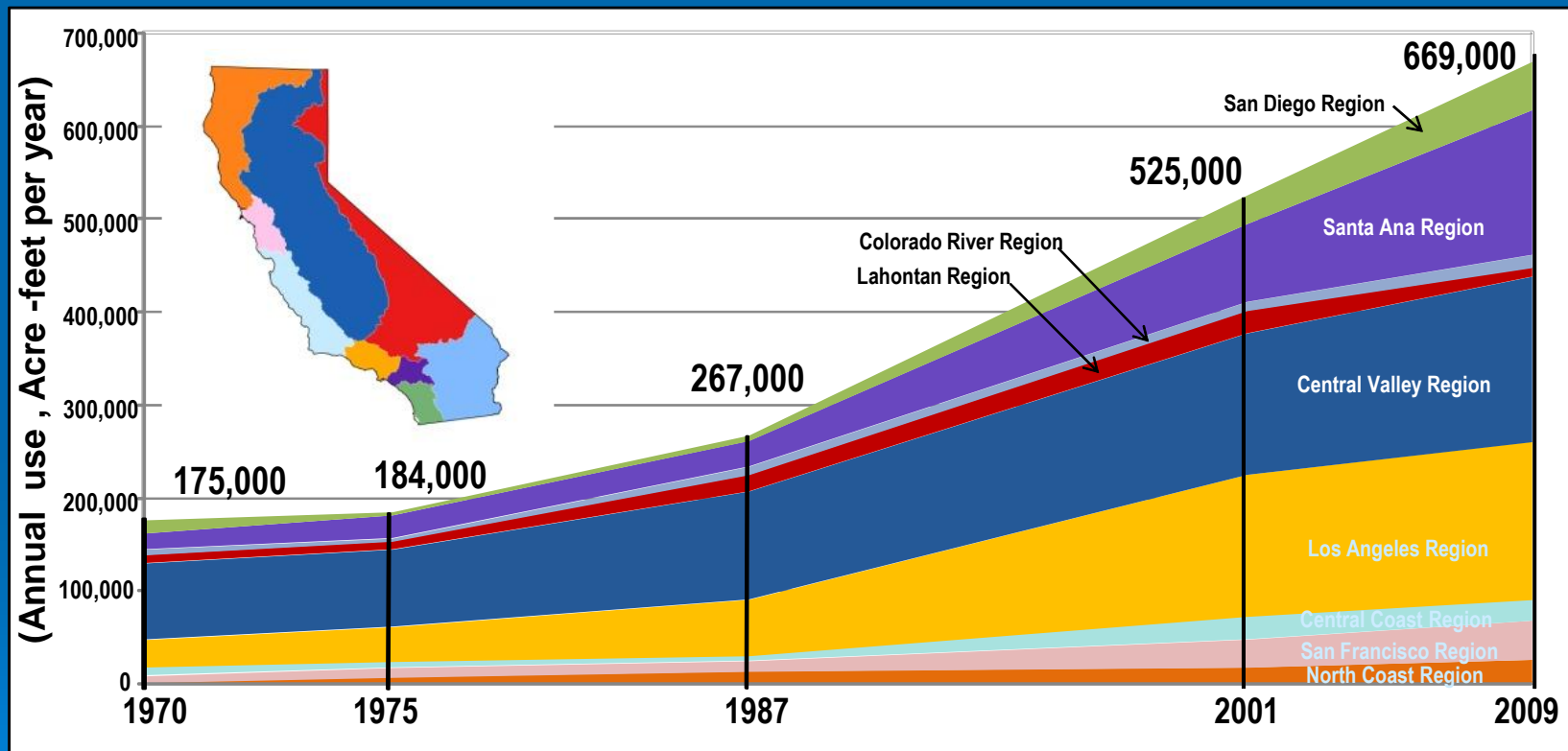
From a Regional Perspective

Wide-ranging climate variability



1970-2009

Municipal Recycled Water Use (by Region)

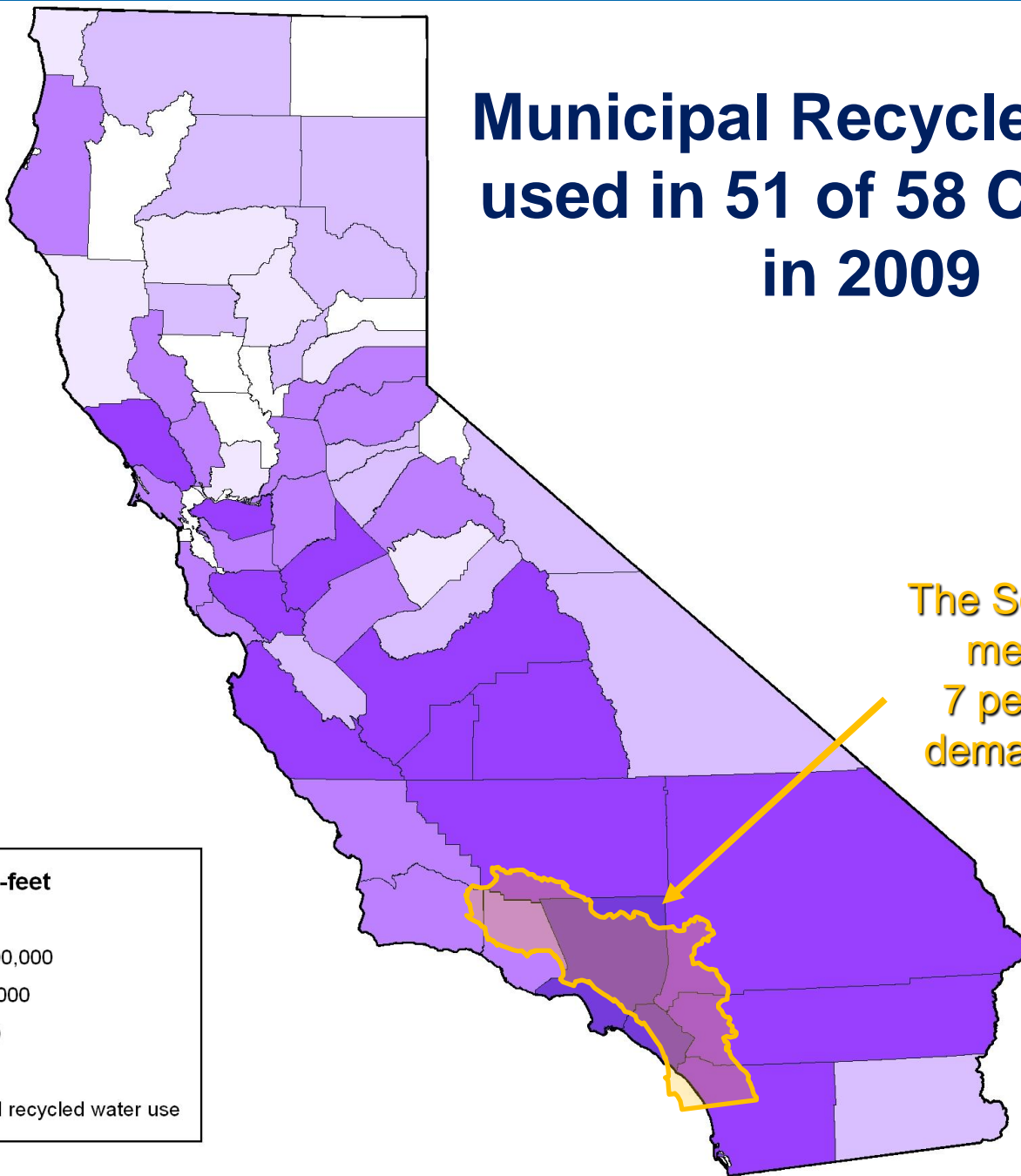
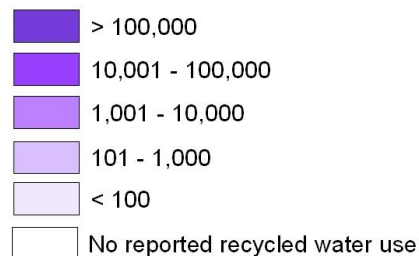


2009 Total 669,000 acre-feet

Municipal Recycled Water used in 51 of 58 Counties in 2009

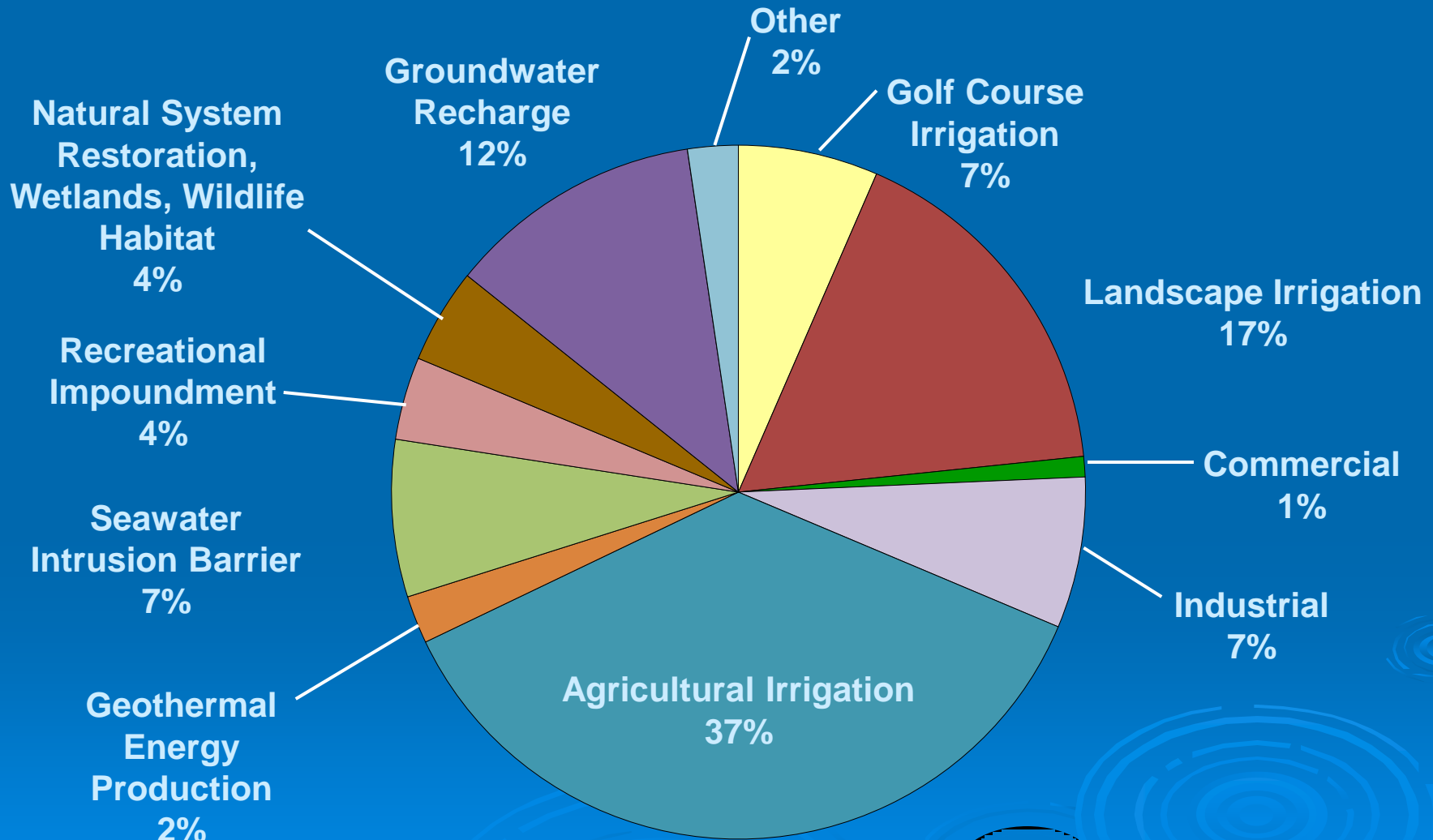
The South Coast Region
met approximately
7 percent of its water
demands with recycled
water

Volume in acre-feet



2009

Beneficial Uses of Recycled Water in California



2009 Total = 669,000 acre-feet

We are working on Update 2013



California Water Plan Update 2013

California Water Plan Update 2013 (Update 2013) is currently being developed by staff from the Department of Water Resources (DWR) and other agencies through rigorous public involvement and State and federal agency coordination processes. It will build on the contents of the previous update — the five-volume *California Water Plan Update 2009*, which provided a strategic plan, a suite of resource management strategies, reports on California's hydrologic regions, and reference and technical guides — and will introduce a number of key additions and enhancements in response to stakeholder recommendations and evolving decision-maker information needs.

Integrated water management is a collection of policies, practices, and tools applied to water resources planning and management to achieve multiple objectives and enhanced outcomes.

Water Plan Framework for Integrated Water Management and Sustainability



Investing in Innovation and Infrastructure

Update 2013 Topic Caucuses & Focus Areas

- Finance Plan
- Groundwater
- Water Quality
- Integrated Flood Management
- Water Technology / R&D
- DAC / Environmental Justice
- Sustainability Indicators
- Scenarios – Planning for Future Uncertainty



Ways to Access Water Plan Information

- Visit the *Water Plan Web Portal*
www.waterplan.water.ca.gov

California Water Plan eNews
Special Edition
March 30, 2010

California Water Plan Update 2009
Integrated Water Management
Bulletin 160-09 Department of Water Resources

California Water Plan Update 2009 released

Today, the California Department of Water Resources released the California Water Plan Update 2009 – a product of four years of collaboration. It's a water plan for the entire state and is available online.

Integrated water management and sustainability is the thrust of continuingly throughout Update 2009. It gives all Californians a new direction for water decisions about such challenges as threatened ecosystems, the uncertainties of climate change and a rising sea level, and population growth.

It spells out the urgencies that demand action, such as dealing with longer and more pronounced droughts, increased flood risk, threats to the environment, impaired water bodies, and aging infrastructure. Update 2009 also introduces new water planning methods with the use of scenarios and response packages while evaluating the effects of future climate change.

The Water Plan came from a steering committee representing 21 State agencies, a 45-member public advisory committee, nearly 40 regional workshops held around the state, about 150 meetings with more than 26,500 person-hours of conversations about our water.

Update 2009 is the State's blueprint for sustainability and integrated water management and marks a significant new chapter in the way California manages its water resources.

Read Press Release
Read Special Flier

Secretary's Message
Secretary of California Natural Resources Agency Lester Snow delivers his message about Update 2009.

Highlights
The Highlights section of Update 2009 provides an easy-to-read overview of the document.

Strategic Plan, Volume 1
Update 2009 includes a strategic plan with a vision, mission, goals, recommendations, and implementation plan.

Resource Management Strategies, Volume 2
Think of these strategies as tools in a tool kit. There are nearly 30 strategies for attaining integrated water management.

Director's Message
Director of California Department of Water Resources Mark Cowin writes the forward to Update 2009.

Click on links below for more information.

Upcoming Meetings Water Plan Web site



California Home Governor Home Amber Alert Tuesday, April 27, 2010

Welcome to *California*

DEPARTMENT OF WATER RESOURCES
PLANNING AND LOCAL ASSISTANCE

California Water Plan

Update 2009 - Integrated Water Management
Integrated Water Management
Bulletin 160-09 Department of Water Resources

Release and Contact Information

eNews Special Edition	1.1 MB
Rollout Flier	0.9 MB

Secretary's Message

"The strategies outlined in these pages provide the means to manage resources comprehensively, from snowmelt to estuary, from field to tap, and all of the uses within the watershed."

Video of former Director Snow giving his address at the Planary meeting on

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Questions & Comments



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